What is claimed is:

1. An electrochemical cell, comprising:

at least a first and a second three-dimensional flow-through electrode, wherein said first three-dimensional flow-through electrode is a positive electrode and said second three-dimensional flow-through electrode is a negative electrode;

a current feeder associated with each of said three-dimensional flow-through electrodes, wherein at least a substantial portion of each of said current feeders is located within said three-dimensional flow-through electrode associated with said current feeder;

a power supply coupled to each of said current feeders to create an electrical potential therebetween; and

wherein the electrochemical cell is operable to facilitate a chemical reaction on a feed solution which is flowing through said electrodes.

2. An electrochemical cell, as claimed in Claim 1, wherein at least one of said three dimensional flow-through electrodes includes a graphite felt material.

3. An electrochemical cell, as claimed in Claim 2, wherein said current feeder includes a plurality of graphite rods inserted at a predetermined spacing into said graphite felt three-dimensional flow-through electrode.

4. An electrochemical cell, as claimed in Claim 3, wherein said predetermined spacing is arranged according to the conductivity of said feed solution and said electrical potential.

5. An electrochemical cell, as claimed in Claim 2, wherein said graphite felt material includes atleast about 17,000 square feet of graphite surface for each square foot of graphite felt.

6. An electrochemical cell, as claimed in Claim 2, wherein said current feeder is a conductive bar comprised on at least one of a graphite rod, a copper rod, a steel rod, and a noble metal rod.

7. The electrochemical cell of Claim 1, wherein said feed solution is water and sodium chloride.

8. The electrochemical cell of Claim 1, wherein said feed solution is water and sodium bromide.

9. The electrochemical cell of Claim 1, wherein said feed solution is sea water.

10. The electrochemical cell of Claim 1, wherein the feed solution is untreated water.

11. A system for recovering a metal from an ore, comprising:

a reaction chamber containing ore;

a first manifold operatively associated with said reaction chamber operable to deliver a leaching solution to a lower portion of said reaction chamber;

a second manifold operatively associated with said reaction chamber operable to remove a pregnant solution from an upper portion of said reaction chamber; and

an electrochemical cell operatively associated with said second manifold and operable to facilitate a chemical reaction on said pregnant solution;

wherein said leaching solution is operable to leach a desired metal from said ore to become said pregnant solution and said chemical reaction is operable to remove at least a portion of said desired metal from said pregnant solution.

12. The system for recovering a metal from an ore, as claimed in Claim 11, further comprising an ore bin chamber operatively associated with said reaction chamber, and configured to deliver said ore to said reaction chamber.

13. The system for recovering a metal from an ore, as claimed in Claim 12, further comprising:

an ore delivery system operable to deliver ore to said ore bin chamber; and

an ore removal system operable to remove leached ore from said reaction chamber.

14. The system for recovering a metal from an ore, as claimed in Claim 13, further comprising:

a second ore bin chamber operatively associated with said ore removal system, and oriented to deliver said leached ore to a second reaction chamber;

a third manifold operatively associated with said second reaction chamber and operable to deliver a second leaching solution to a lower portion of said second reaction chamber;

a fourth manifold operatively associated with said second reaction chamber and operable to remove a second pregnant solution from an upper portion of said second reaction chamber; and

a second electrochemical cell operatively associated with said fourth manifold and operable to facilitate a chemical reaction on said second pregnant solution;

wherein said second leaching solution is operable to leach a second desired metal from said leached ore to become said second pregnant solution and said chemical reaction is operable to remove at least a portion of said second desired metal from said pregnant solution.

15. The system for recovering a metal from an ore, as claimed in Claim 11, wherein said electrochemical cell comprises:

at least a first and a second three-dimensional flow-through electrode, wherein said first three-dimensional flow-through electrode is a positive electrode and said second three-dimensional flow-through electrode is a negative electrode;

a current feeder associated with each of said three-dimensional flow-through electrodes, wherein at least a substantial portion of at least one of said current feeders is located within said three-dimensional flow-through electrode associated with said current feeder; and

a power supply coupled to each of said current feeders to create an electrical potential therebetween.

16. The system for recovering a metal from an ore, as claimed in Claim 15, wherein said power supply comprises a direct current supply operable to create about 9 volts of electrical potential between said current feeders.

17. The system for recovering a metal from an ore, as claimed in Claim 15, wherein said first and second three dimensional flow-through electrodes are about four inches by four inches, and about one inch thick, and a flow rate of said pregnant solution through said electrochemical cell is about 0.03 gallons per minute.

18. A method for treating water, comprising:

providing an electrochemical cell having a first flow-through electrode and a second flow though electrode, said first and second flow-through electrodes spaced apart to provide an inter-electrode space;

applying a voltage between said first flow-through electrode and said second flow-through electrode to create a positively charged first flow-through electrode and a negatively charged second flow-through electrode;

feeding untreated water into said inter-electrode space; and

collecting treated water which has passed through said second flow-through electrode.

19. The method for treating water, as claimed in Claim 18, wherein said first and second flow-through electrodes are graphite felt electrodes and said applying a voltage step includes applying a voltage to a current feeder associated with each electrode.

20. The method for treating water, as claimed in Claim 18, wherein said second flow-through electrode is a copper wire screen electrode.

21. The method for treating water, as claimed in Claim 18, wherein said applying a voltage step includes:

providing a DC power supply having a positive terminal and a negative terminal;

coupling said positive terminal to said first flow-through electrode; and

coupling said negative terminal to said second flow-through electrode.

22. The method for treating water, as claimed in Claim 21, wherein said DC power supply has a voltage potential of about 9 Volts.